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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,306

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Gang Yu

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02/08/2006

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EXAMINER

LUI, DONNA V

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/646,306	YU ET AL.	
	Examiner	Art Unit	
	Donna V. Lui	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 21-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-36 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/07/04, 02/13/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS 01/07/04</u> . |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to components and placement within an OLED device, classified in class 345, subclass 39.
 - II. Claims 21-29, drawn to measuring intensities of an OLED, classified in class 345, subclass 63.
 - III. Claims 30-33, drawn to measuring and detecting intensities, classified in class 345, subclass 77.
 - IV. Claims 34-36, drawn to calibrating and correcting signals, classified in class 345, subclass 204.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed such as the placement and removing of a radiation-sensing apparatus or reflector in Invention II. The subcombination has separate utility such as the arrangement of components within the device, as recited in Invention I.

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3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention III relates to the measuring and changing of intensities and the determining of correction factors as a function of intensity. The subcombination has separate utility such as the arrangement of components within the device, as recited in Invention I.

4. Inventions I and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention IV relates to the measuring of a calibration signal and determining data signals as a function of the input and correction factor where the correction factor is a function of the calibration signal. The subcombination has separate utility such as the arrangement of components within the device, as recited in Invention I.

5. Inventions II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as

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claimed because invention III relates to the measuring and changing of intensities and the determining of correction factors as a function of intensity. The subcombination has separate utility such as the placement and removing of a radiation-sensing apparatus or reflector in Invention II.

6. Inventions II and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention IV relates to the measuring of a calibration signal and determining data signals as a function of the input and correction factor where the correction factor is a function of the calibration signal. The subcombination has separate utility such as the placement and removing of a radiation-sensing apparatus or reflector in Invention II.

7. Inventions III and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because invention IV relates to the measuring of a calibration signal and determining data signals as a function of the input and correction factor where the correction factor is a function of the calibration signal. The subcombination has separate utility such as the measuring

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and changing of intensities and the determining of correction factors as a function of intensity, as recited in invention III.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

9. During a telephone conversation with Mary Ann Capria on January 18, 2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-36 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 1-3, and 7** are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (Pub. No: 2001/0035848 A1).

With respect to **Claim 1**, Johnson discloses an electronic device (*figure 1, element 1*) comprising a first circuit comprising a radiation-emitting circuit element (*element 18*) and a second circuit comprising a radiation-sensing circuit element (*element 16*). Johnson teaches the radiation-sensing element such that it is not part of the first circuit (*Note that element 16 is not within the pixel array*).

With respect to **Claim 2**, Johnson teaches the first circuit is coupled to a first power supply line and a data line (*figure 1, element 6 is coupled to the data line (element 7) and further coupled to a power supply through the data register, since it is well known that a power supply must be connected to the data register for proper functioning*).

With respect to **Claim 3**, Johnson teaches the first circuit is further coupled to a select line and a second power supply line (*figure 1, element 6 is coupled to a select line (element 7) and further coupled to a power supply through a register (element 13), since it is well known that a power supply must be connected to the register for proper functioning*).

With respect to **Claim 7**, Johnson teaches the radiation-sensing element is not electrically connected to the first circuit (*See Figure 1, Note that there is no direct electrical connection between the photodiode (16) and the radiation-emitting circuit (6)*).

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12. Claims 1, 8-11, 12, 14-17, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pichler.

With respect to Claim 1, Pichler discloses an electronic device comprising: a first circuit comprising a radiation-emitting circuit element (*See figure 2, element 17*) and a second circuit comprising a radiation-sensing circuit element (*element 11*). Pichler teaches the radiation-sensing element is not part of the first circuit (*Note that there are no connections between element 12 and 11*).

With respect to Claim 8, Pichler discloses an electronic device (*See figure 2*) comprising a first radiation-emitting element lying within a pixel (*element 17*) and a first radiation-sensing element (*element 11*) for sensing radiation emitted from the first radiation-emitting element. Pichler teaches the first radiation-sensing element to lie outside the pixel (*Note that element 11 is not located within the pixel array*).

With respect to Claim 16, Pichler discloses an electronic device (*See figure 2*) comprising a first radiation-emitting element (*element 17*), a waveguide (*element 12*), and a first radiation-sensing element (*element 11*). Pichler teaches the waveguide to optically couple the first radiation-emitting element to the first radiation-sensing element (*since the waveguide is placed between the radiation-emitting element and the radiation sensing element and due to the optical properties of glass, then element 12 optically couples the radiation emitting element to the radiation sensing element*).

With respect to **Claim 9**, Pichler teaches the first radiation-sensing element lies at a location between the first radiation-emitting element (*element 17*) and the user side of the electronic device (*the user side is from viewpoint of viewer 31*).

With respect to **Claim 10**, Pichler teaches the electronic device to further comprise a waveguide (*the waveguide is equivalent to glass, element 12*). Pichler teaches the waveguide to optically couple the first radiation-emitting element to the first radiation-sensing element (*since the waveguide is placed between the radiation-emitting element and the radiation sensing element and due to the optical properties of glass, then element 12 optically couples the radiation emitting element to the radiation sensing element*).

With respect to **Claim 11**, Pichler teaches the waveguide (*element 12*) to lie at a location between the first radiation-emitting element (*element 17*) and the user side of the electronic device (*the user side is from viewpoint of viewer 31*).

With respect to **Claim 12 and 18**, Pichler teaches the electronic device includes a plurality of radiation-emitting elements (*Pixels, See figure 2, element 17*), including the first radiation-emitting element, within an array (*Note that since the array has a plurality of pixels, then one can arbitrarily be defined the "first radiation-emitting element"*). Pichler teaches the array having an array edge, the waveguide having a waveguide edge adjacent to the array edge, and the first radiation-sensing element is connected to the waveguide edge through optical

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coupling (*See figure 2, Note that elements 14 and 12 both have an edge that is adjacent to each other*).

With respect to **Claim 13 and 19**, Pichler teaches the electronic device includes a plurality of radiation-emitting elements (*Pixels, See figure 2, element 17*), including the first radiation-emitting element, within an array (*Note that since the array has a plurality of pixels, then one can arbitrarily be defined the "first radiation-emitting element"*). Pichler teaches the array having array edges, the waveguide having waveguide edges adjacent to the array edges, and a plurality of radiation-sensing elements, including the first radiation-sensing element is connected to the waveguide edges through optical coupling as shown by element 30 in figure 2 (*See figure 2, Note that elements 14 and 12 both have an edges that are adjacent to each other*).

With respect to **Claim 14**, Pichler teaches the first radiation-emitting element is not electrically connected to the first radiation-sensing element (*See figure 2, where no electrical connections are shown between 11 and 12*).

With respect to **Claim 15**, Pichler teaches the first radiation-emitting element is not electrically coupled to the first radiation-sensing element (*See figure 2, since the glass waveguide (element 12) lies between elements 17 and 11 and no electrical connections are present between elements 11 and 12, then it is clearly evident that elements 17 and 11 are optically coupled through element 12*).

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With respect to **Claim 17**, Pichler teaches the waveguide (*element 12*) to lie at a location between the first radiation-sensing element (*element 17*) and the user side of the electronic device (*the user side is from viewpoint of viewer 31*).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pichler as applied to claim 1 above, and further in view of Booth, JR. et al. (Pub. No.: 2003/0122749 A1).

With respect to **Claim 4**, Pichler teaches the second circuit is coupled to a reference potential line (*See figure 2, element 11 is connected to the ground reference potential of element 28*), but does not teach the second circuit coupled to a sense amplifier. Booth teaches the use of a sense amplifier in an organic light emitting diode display. At the time the invention was made it would have been obvious for a person of ordinary skill in the art to use a sense amplifier, as taught by Booth, to the electronic device of Pichler for the purpose of amplifying the photocurrent generated by the OLED sensing light (*page 2, [0028], lines 17-19*).

15. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pichler and Booth as applied to claims 1 and 4 above, and further in view of Johnson.

With respect to **Claim 5**, Pichler teaches the radiation-sensing circuit element to comprise a photocathode. Pichler does not teach the radiation-sensing circuit element to comprise a photodiode. Johnson teaches the radiation-sensing circuit to comprise a photodiode, however any photosensor is suitable (*page 1, [0008], lines 1-4*). At the time the invention was made it would have been obvious for a person of ordinary skill in the art to use a photodiode as taught by Johnson instead of the photocathode to the electronic device of Pichler for the purpose of measuring light (*page 1, [0008], lines 1-4*) and doing so with an alternative photosensor.

16. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pichler and Booth as applied to claims 1 and 4 above, and further in view of Lu et al. (Pub. No.: 2004/0174116).

With respect to **Claim 6**, Pichler teaches the radiation-sensing circuit element to comprise a photocathode but does not mention suitable alternatives such as a phototransistor. Lu teaches the use of an organic phototransistor (*page 1, [0003], line 11*). At the time the invention was made it would have been obvious for a person of ordinary skill in the art to use an organic phototransistor, as taught by Lu to the electronic device of Pichler for the purpose of having performance advantages over conventional materials such as the wavelength at which an organic emissive layer emits light may generally be readily tuned with appropriate dopants, while it is more difficult to tune inorganic emissive materials (*page 1, [0003], lines 11-17*).

17. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pichler as applied to claim 16 above, and further in view of Kobayashi (Pub. No.: 2005/0134171 A1).

With respect to **Claim 20**, Pichler teaches the first radiation-emitting element comprises a transparent anode (*figure 1, element 13; column 5, lines 15-16*) and a cathode (*figure 1, element 15; column 5, lines 22-29*). Pichler does not mention the cathode being transparent. Kobayashi teaches both a transparent anode (*figure 1, element 5*) and transparent cathode for an organic electroluminescence device (*figure 2, element 21; page 1, [0005], lines 13-15*). At the time the invention was made it would have been obvious for a person of ordinary skill in the art to use a transparent cathode, as taught by Kobayashi, to the electronic device of Pichler for the purpose of emitting light from a side opposite to the substrate (*page 1, [0005], lines 13-15*).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Ishii et al. (Patent Number: 5,659,332) is cited to teach an electronic device having an optical waveguide, transparent electrodes, picture elements and photosensors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna V. Lui whose telephone number is (571) 272-4920. The examiner can normally be reached on Monday through Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donna V Lui
Examiner
Art Unit 2675


Amare Mengistu
Primary Examiner